8th Grade
Main Rangefinder 3

It is important that you explain and show how you solved the problems on this assessment. If you use a calculator, show how you set up the math.

❶ Manuel, Sam and five of their friends are going to order pizza for d___ [speech bubble: Effective problem-solving strategies (all)] $4.99 plus $0.75 per topping.

a. Find the cost of each pizza they ordered and fill in the appropriat___ ___ces in the chart below. Do not include sales tax.

Toppings	Pizza 1	Pizza 2	Pizza 3	Pizza 4	Pizza 5
Olives					X
Mushrooms					X
Pineapple				X	
Sausage		X			X
Pepperoni		X	X		X
Canadian Bacon		X		X	X
Extra Cheese	X				X
Pizza Cost - without tax	5.74	7.24	5.74	6.49	$9.49

[box: **X = topping was ordered**]

b. What is the **total** cost of the five pizzas, including a 5% sales tax? Sho[w] *how you found your answer.* 34.70 total cost w/out tax
The five boys will + 1.74 sales tax
have to pay $36.44 36.44 total cost with tax
for their pizzas.

[speech bubble: Limited use of symbols and communication skills]

c. Each pizza has 8 slices. Sam plans to eat two slices from each pizza. What fraction of all the pizzas does he plan to eat? What percent is this? *Show or explain how you found your answer.*

$\frac{10}{40} = \frac{1}{4}$ Same will eat ¼ of all five Pizzas.

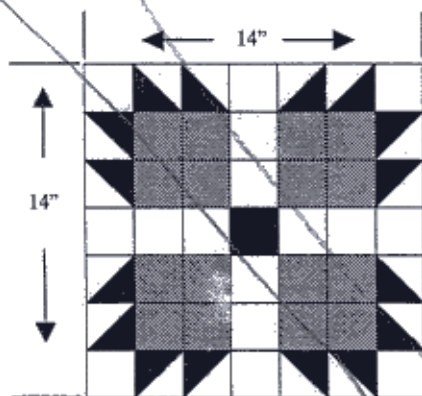[speech bubble: Adequate solutions and processes]

d. Each person pays for his share of the total cost based on the amount of pizza he eats. How much should Sam pay? *Show or explain how you found your answer.*

36.44
× .25
9.11

Sam will have to pay $9.11 for a the pizza he ate.

Read problems 2, 3, 4 and 5 on the next few pages. Select three problems to answer. Answer ALL of the parts of the three problems you select to answer. Cross out the one problem that you do not choose to answer.

❷ The quilt block pictured below is called a "Bear's Paw." It is made by sewing together squares and triangles. Some pieces are black, while others are white or gray. Use the block to answer the questions.

a. If the completed "Bear's Paw" block is 14 inches by 14 inches, what is the area that is shaded black? *Show or explain how you found your answer.*

b. What fraction of the total "Bear's Paw" block is shaded black? *Show or explain how you found your answer.*

c. Juanita needs to cut 2 ½ inch by 2 ½ inch squares from a piece of black material that is 44 inches wide and 36 inches long. What is the maximum number of squares she can cut from this piece of material? *Show or explain how you found your answer.*

❸ Students were surveyed to find out how many _____ owned.
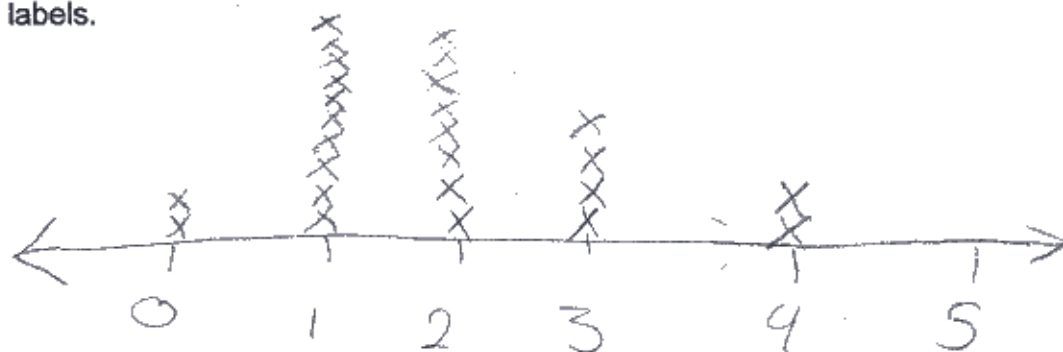
> Understanding of situations

_____ data to complete the frequency table.

Frequency Table for Pets per Family

Pets per Family	Tally	Frequency
0	11	2
1	⫽N ⫽N	10
2	⫽N 111	8
3	1111	4
4	11	2
5		0

PETS PER FAMILY

3, 1, 2, 1, 4, 2, 1, 2, 1, 2, 0, 3, 1, 2, 2, 3, 2, 2, 4, 1, 1, 1, 1, 0, 1, 3

b. Graph or plot this data in the space provided below. Be sure to include appropriate identifying labels.

> Limited communication skills (lack of graph labels)

c. H_ _ many families have 2 or more pets? *Show or explain how you found you_ er.*

8 - 2pets per family
4 - 3pets per family
+ 2 - 4pet per family
───────────
16 familys have two or more pets per family.

> Well-defined structure

> Occasional computational or surface errors

_____ is the mean number of pets per family? What is the mode? *Show or exp_ you found your answer.*

mean - 1.083‾

mode - 1

0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3

·4·4 = 24

$$\frac{24}{26} = 1.083\overline{3}$$

4 Ron, Leora and Susan all work at the same restaurant. They ~~~~~~~~~ nt wages ba ~~~~~~~~ e as well as any tips they receive. Th ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

a. If Ron's hourly wage is ~~~~~~~~~~~~~ a's wage, a ~~~~~~~~~~~~ .00 less than twice Leora's ~~~~~~~~ aic expressi ~~~~~~~~ ges. Be sure to explain your varia ~~~~~~

> *[Speech bubble: Limited mathematical vocabulary]*
> *[Speech bubble: Limited use of symbols and communication skills]*

Ron: **Leora:**   **Susan:**

$5 + 11 = \$16$ Rons Wages $16 + 5 = \$11$ Leora Wages $10 + 2x11 = \$12$ Susans wages

Per hour   Per hour   Per hour

b. If Leora's hourly wage is $8.00, what are Ron's and Susan's wages? *Show or explain how you found your answer.*

Ron would have $13 per hour and Susan would have $6 per hour.

$8 + 5 = 13$ $8x2 - 10 = 6$

c. If, in one week, Ron worked for 32 hours and got $56.25 in tips, how much did he earn? *Show or explain how you found your answer.*

32 hours worked
$\times 13$ wages per hour
416 total pay

416.00 total pay
+ 56.25 tips
472.25 earned

Ron will get $472.25 for working 32 hours and getting $56.25 of money tips.

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5 Roger works ~~~~~~~ Department of Fish and Game. To discover how healthy a pon ~~~~~~~ e of the number of fish in the pond. He asked his son Mark ~~~~~~~

> *[Speech bubble: Appropriate processes accurately completed]*
> *[Speech bubble: Effective use of symbols and communication skills]*

a. ~~~~~~~~~ 6 bass and 3 catfish. They tagged and released the fish. The ~~~~~~~ f the fish in the second capture had tags. About how many ~~~~~ are ~~~~~~~ explain how you found your answer.

8 trout
6 bass $+12$
$+3$ catfish / 67
17 tagged fish

$\frac{60}{5} = 55$ $\frac{17}{12} = \frac{5}{-5}$

There are about 67 fish altogether in the pond.

b. If you go fishing in this pond, what is the probability that the first fish you catch will be a trout? *Show or explain how you found your answer.*

$6:3$ to~~~~
$x2, x3$

40/67 would be the probability

total # of fish

c. How many of **each** type of fish are there likely to be in the pond if the ratio of trout to ba ~~~ catfish in the pond is the same as in the first capture? *Show or explain how you found your answer.*

> *[Speech bubble: Adaptable processes]*

40/67 - trout Ratio   18/67 - Bass Ratio   9/67 - Catfish Ratio

> *[Speech bubble: Effective mathematical vocabulary]*